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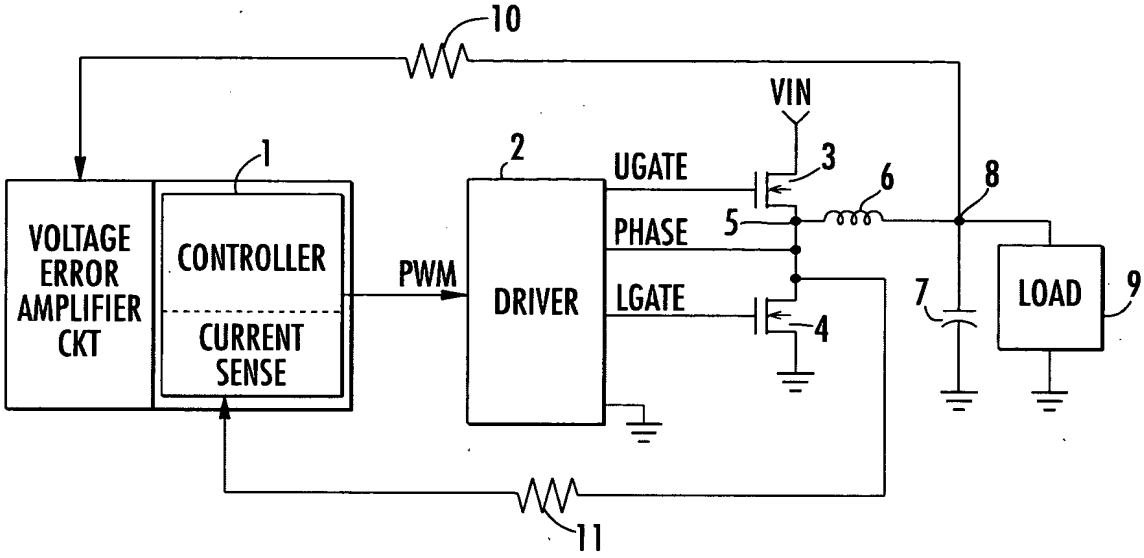



*FIG. 1*
*(PRIOR ART)*

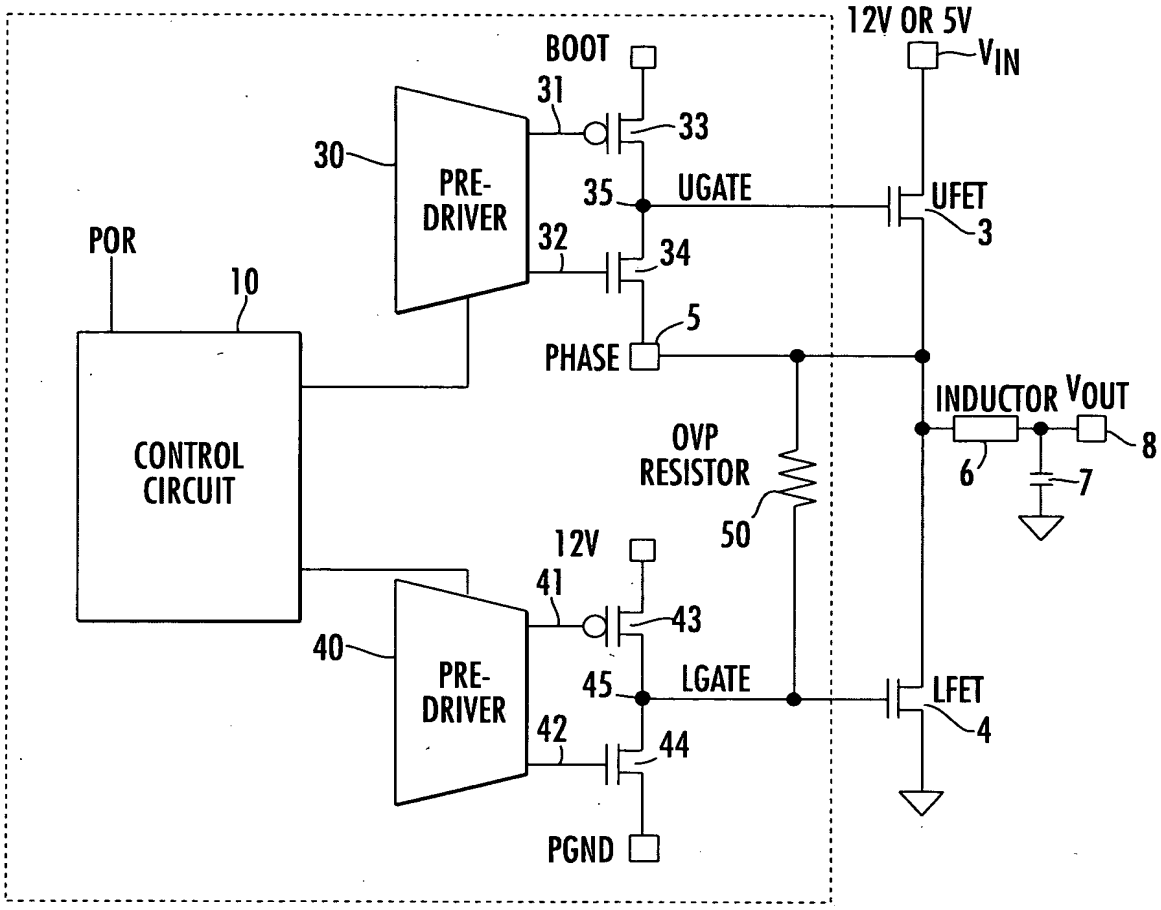

12V OR 5V
$V_{IN}$
BOOT
31
33
30
PRE-
DRIVER
35
UGATE
UFET
3
POR
32
34
10
5
PHASE
INDUCTOR
$V_{OUT}$
8
6
7
CONTROL
CIRCUIT
OVP
RESISTOR
50
12V
41
43
40
PRE-
DRIVER
45
LGATE
LFET
4
42
44
PGND

*FIG. 2*

FIG. 3A

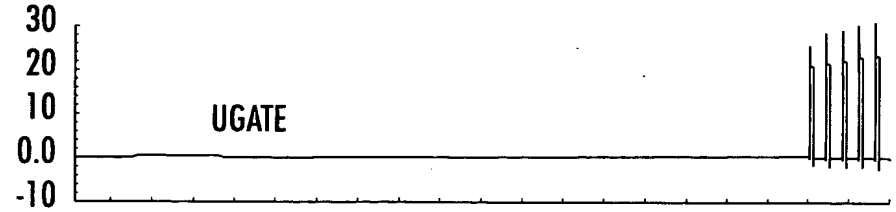



FIG. 3B

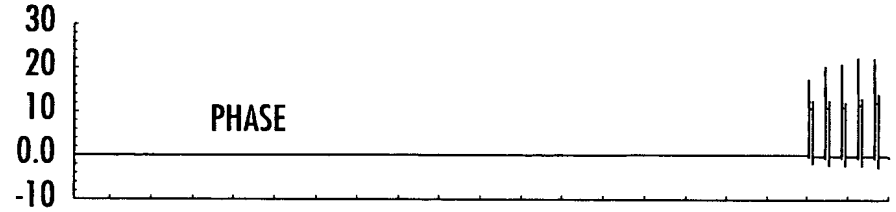



FIG. 3C

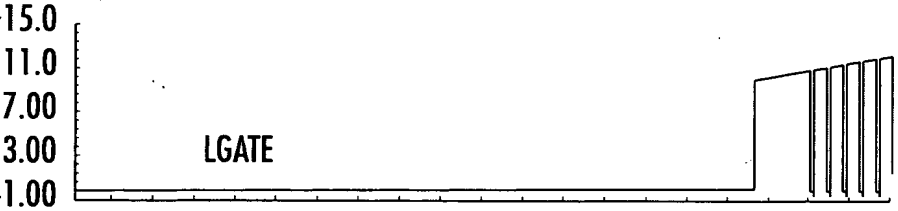



FIG. 3D

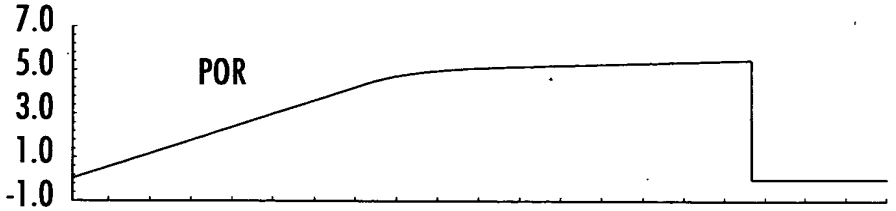



FIG. 3E

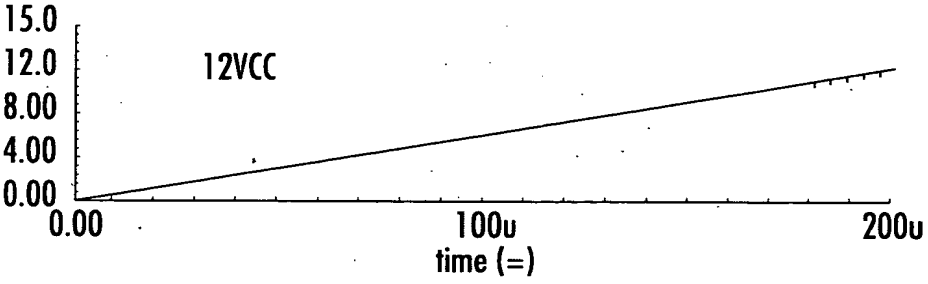


FIG. 4A

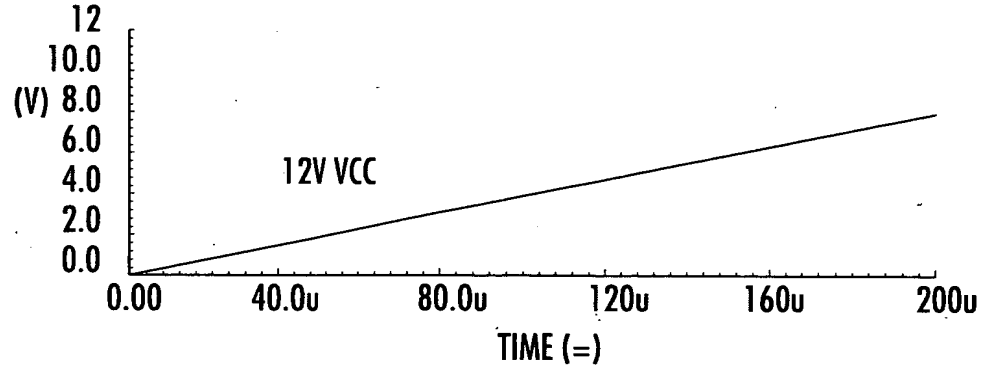



FIG. 4B

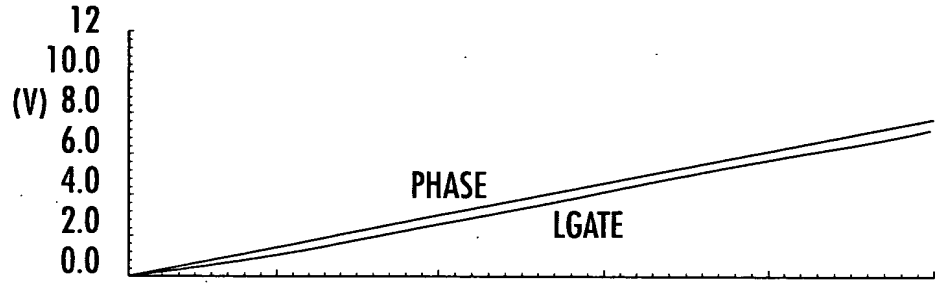
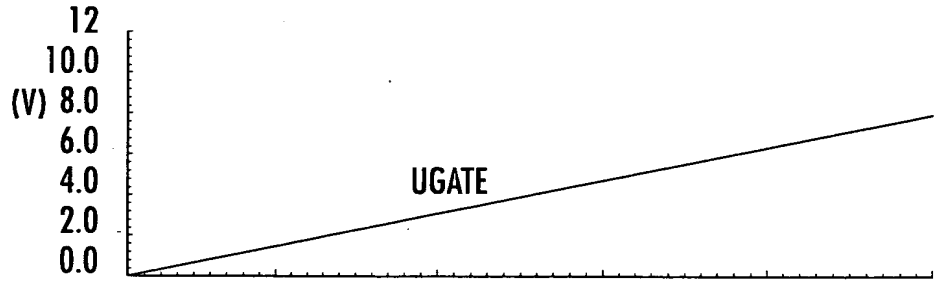



FIG. 4C



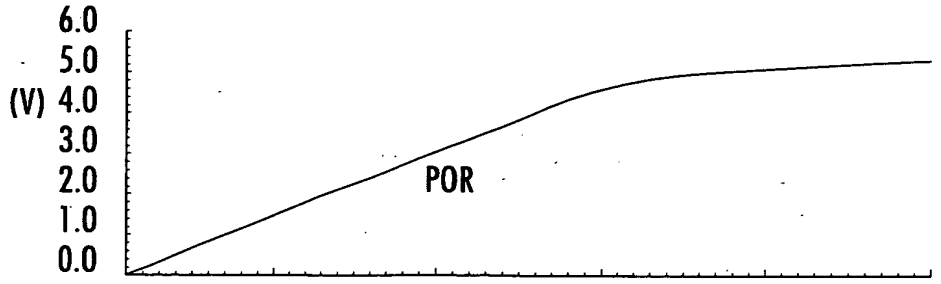


FIG. 4D